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Translation

PATENT COOPERATION TREATY



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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference T785.ERG-1	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/014170	International filing date (day/month/year) 07 November 2003 (07.11.2003)	Priority date (day/month/year) 08 November 2002 (08.11.2002)
International Patent Classification (IPC) or national classification and IPC C07J 9/00		
Applicant KANEKA CORPORATION		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand 05 April 2004 (05.04.2004)	Date of completion of this report 06 December 2004 (06.12.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- international search (under Rules 12.3 and 23.1(b))
- publication of the international application (under Rule 12.4)
- international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

The international application as originally filed/furnished

the description:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

- the description, pages _____
- the claims, Nos. _____
- the drawings, sheets/figs _____
- the sequence listing (specify): _____
- any table(s) related to sequence listing (specify): _____

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages _____
- the claims, Nos. _____
- the drawings, sheets/figs _____
- the sequence listing (specify): _____
- any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-6	YES
	Claims	7	NO
Inventive step (IS)	Claims		YES
	Claims	1-7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 2002-105097 A (Kanegafuchi Chemical Ind. Co., Ltd.), 10 April 2002 (Family: none)

Document 2: JP 2002-80493 A (Kanegafuchi Chemical Ind. Co., Ltd.), 19 March 2002 (Family: none)

Document 3: JP 2002-80492 A (Kanegafuchi Chemical Ind. Co., Ltd.), 19 March 2002 (Family: none)

Document 4: JP 50-142787 A (Mitsubishi Petrochemical Co., Ltd.), 17 November 1975 (Family: none)

Document 5: JP 58-90599 A (Glaxo Group Ltd.), 30 May 1983 & GB 2107715 A & DE 3238569 A & BE 894725 A & SE 8205904 A & DK 8204611 A & FI 8203561 A & FR 2514769 A & NL 8204013 A & ZA 8207601 A & ES 516611 A & AU 8289460 A & CA 1189852 A & CH 652134 A & US 4866051 A

Document 6: JP 7-41495 A (Nippon Kayaku KK), 10 February 1995 & EP 626388 A2 & AU 9463257 A & US 5614651 & CA 2124382 A & CN 1100101 A & HU 67804 A & US 5648507 A

Claims 1-6

Documents 1-3 disclose use of hexane, heptane and octane as organic solvents in inventions in which ergosterol is recovered by separating it out from an organic solvent solution containing ergosterol. Document 4

discloses extraction of ergosterol with an organic solvent such as n-butanol, adding water to the resulting extract solution, and leaving it at low temperature to obtain ergosterol. Documents 5 and 6 further disclose crystallization by using an organic solvent in the presence of water, or by gradually adding water, when crystallizing steroid hydrates. Given this, a person skilled in the art could easily supply water to the organic solvent solution when isolating ergosterol by separating it out.

The quantity of water supplied and the method for supplying it could be appropriately selected with reference to disclosures in documents 6 and 7.

In addition, extraction using an organic solvent, and recovery from this extract solution by cooling and crystallization is also conventionally practiced in the case of ergosterol (see e.g. document 1); and the use of a non-water-soluble organic solvent for this purpose is art disclosed in documents 1-3.

In passing, since the specific technical means for giving a percentage crystallization of the ergosterol to be isolated within the set range is not mentioned, claim 6 merely describes the result of carrying out a method described in claims 1-5; and since, as discussed above, the method set forth in claims 1-5 does not involve an inventive step, claim 6 also does not involve an inventive step.

Claim 7

Documents 1 and 3 disclose obtaining large crystals which are readily susceptible to solid/liquid separation, or bringing down crystal aggregates of a size which allows the use of known solid/liquid separation techniques, in the recovery of ergosterol; and these (aggregated) crystals of ergosterol are not substantially

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distinguishable from ergosterol aggregates claimed in
claim 7.